6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OAR-2017-0427; FRL-9975-48-OAR]

RIN 2060-AT73

National Emission Standards for Hazardous Air Pollutants for Asbestos: Request for Approval of an Alternative Work Practice for Asbestos Cement Pipe Replacement

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notification of request for comments.

SUMMARY: This action provides public notice and solicits comment on an alternative work practice (AWP) request under the Clean Air Act, to use new technology and work practices developed for removal and replacement of asbestos cement (A/C) pipe. In this action, the Environmental Protection Agency (EPA) is soliciting comment on all aspects of this request for an AWP that, in order to be approved, should be at least environmentally equivalent to the existing work practices in the National Emission Standards for Hazardous Air Pollutants for Asbestos (Asbestos NESHAP), which applies to the removal and replacement of A/C pipe.

DATES: *Comments.* The EPA must receive written comments on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

Public Hearing. If a public hearing is requested by [**INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**], then we will hold a public hearing on [**INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**] at the EPA William Jefferson Clinton (WJC) East Building, 1201 Constitution Avenue, NW, Washington, DC 20004. If a public hearing is requested, then we will provide additional details about the public hearing on our Web site at

https://www.epa.gov/stationary-sources-air-pollution/asbestos-national-emission-standards-hazardous-air-pollutants. To request a hearing, to register to speak at a hearing, or to inquire if a hearing will be held, please contact Aimee St. Clair at (919) 541-1063 or by email at *stclair.aimee@epa.gov*. The EPA does not intend to publish any future notices in the **Federal Register** regarding a public hearing on this proposed action and directs all inquiries regarding a hearing to the Web site and contact person identified above. The last day to pre-register in advance to speak at the public hearing will be **[INSERT DATE 13 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

ADDRESSES: *Comments*. Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2017-0427, at *http://www.regulations.gov*. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. Regulations.gov is our preferred method of receiving comments. However, other submission formats are accepted. To ship or send mail via the United States Postal Service, use the following address: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA-HQ-OAR-2017-0427, Mail Code 28221T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Use the following Docket Center address if you are using express mail, commercial delivery, hand delivery, or courier. EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. Delivery verification signatures will be available only during regular business hours.

Do not submit electronically any information you consider to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Send or deliver information identified as CBI only to the following address. OAQPS Document Control Officer (C404-02), Office of Air Quality Planning and Standards, Environmental Protection Agency,

Research Triangle Park, North Carolina 27711, Attention Docket ID No. EPA-HQ-OAR-2017-0427.

The EPA may publish any comment received to its public docket. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/where-send-comments-epa-dockets*.

Public Hearing. If a public hearing is requested, it will be held at EPA Headquarters, EPA WJC East Building, 1201 Constitution Avenue, NW, Washington, DC 20004. If a public hearing is requested, then we will provide details about the public hearing on our Web site at: *https://www.epa.gov/stationary-sources-air-pollution/asbestos-national-emission-standards-hazardous-air-pollutants*. The EPA does not intend to publish another document in the **Federal Register** announcing any updates on the request for a public hearing. Please contact Aimee St. Clair at (919) 541-1063 or by email at *StClair.Aimee@epa.gov* to request a public hearing, to register to speak at the public hearing, or to inquire as to whether a public hearing will be held.

The EPA will make every effort to accommodate all speakers who arrive and register. If a hearing is held at a U.S. government facility, individuals planning to attend should be prepared to show a current, valid state- or federal-approved picture identification to the security staff in order to gain access to the meeting room. An expired form of identification will not be permitted. Please note that the Real ID Act, passed by Congress in 2005, established new requirements for

entering federal facilities. If your driver's license is issued by a noncompliant state, you must present an additional form of identification to enter a federal facility. Acceptable alternative forms of identification include: Federal employee badge, passports, enhanced driver's licenses, and military identification cards. Additional information on the Real ID Act is available at *https://www.dhs.gov/real-id-frequently-asked-questions*. In addition, you will need to obtain a property pass for any personal belongings you bring with you. Upon leaving the building, you will be required to return this property pass to the security desk. No large signs will be allowed in the building, cameras may only be used outside of the building, and demonstrations will not be allowed on federal property for security reasons.

FOR FURTHER INFORMATION CONTACT: For questions about this action, contact Ms. Susan Fairchild, Sector Policies and Programs Division (D-243-04), Office of Air Quality Planning and Standards (OAQPS), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5167; fax number: (919) 541-4991; and email address: *fairchild.susan@epa.gov.*

SUPPLEMENTARY INFORMATION:

Docket. The EPA has established a docket for this rulemaking under Docket ID No. EPA-HQ-OAR-2017-0427. All documents in the docket are listed in the Regulations.gov index. Although listed in the index, some information is not publicly available, *e.g.*, CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically in Regulations.gov or in hard copy at the EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue, NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday

through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

Instructions. Direct your comments to Docket ID No. EPA-HQ-OAR-2017-0427. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov*, including any personal information provided, unless the comment includes information claimed to be CBI or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov* or email. This type of information should be submitted by mail (see **ADDRESSES** section of this preamble for correct mailing address). The *http://www.regulations.gov* Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through *http://www.regulations.gov*, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters or any form of encryption and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at *http://www.epa.gov/dockets*.

Submitting CBI. Do not submit information containing CBI to the EPA through *http://www.regulations.gov* or email. Clearly mark the part or all of the information that you

claim to be CBI. For CBI information in a disk or CD-ROM that you mail to the EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not contain the information claimed as CBI for inclusion in the public docket. If you submit a CD-ROM or disk that does not contain CBI, mark the outside of the disk or CD-ROM clearly that it does not contain CBI. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information so marked will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2.

Acronyms and Abbreviations. We use multiple acronyms and terms in this notice. While this list may not be exhaustive, to ease the reading of this notice and for reference purposes, the EPA defines the following terms and acronyms here:

A/C	asbestos cement
ACM	asbestos-containing material
ACPRP	asbestos cement pipe replacement project
ACWM	asbestos-containing waste material
ASTM	American Society for Testing and Materials
AWP	alternative work practice
CBI	confidential business information
CFR	Code of Federal Regulations
CTPS	close tolerance pipe slurrification
EPA	Environmental Protection Agency
NESHAP	national emission standards for hazardous air pollutants
OAQPS	Office of Air Quality Planning and Standards
PVC	polyvinyl chloride
RACM	regulated asbestos-containing material, as defined in 40 CFR 61.141
VE	visible emissions, as defined in 40 CFR 61.141

Organization of This Document. The information in this notice is organized as follows:

I. General Information

A. Does this action apply to me?

Categories and entities potentially affected by this reconsideration action include those listed in Table 1 of this preamble.

Table 1. NESHAP and Industrial Source Categories Affected by This Proposed Action

NESHAP and Source Category	NAICS[1] Code
Water treatment plants	221310
Distribution line, sewer and water, construction, rehabilitation, and repair	237110
Sewer main, pipe and connection, construction, rehabilitation, and repair	237110
Storm sewer construction, rehabilitation, and repair	237110
Irrigation systems construction, rehabilitation, and repair	237110
Water main and line construction, rehabilitation, and repair	237110

Pipeline rehabilitation contractors	237120
Horizontal drilling (*e.g.*, underground cable, pipeline, sewer installation)	237990
Pipe fitting contractors	238220
Power, communication and pipeline right-of-way clearance (except maintenance)	238910
Pipeline transportation (except crude oil, natural gas, refined petroleum products)	486990
Pipeline terminal facilities, independently operated	488999
Pipeline inspection (*i.e.*, visual) services	541990
Asbestos removal contractors	562910
Asbestos abatement services	562910

[1] North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this proposed action. To determine whether your A/C pipe replacement project (ACPRP) would be affected by this proposed action, you should examine the applicability criteria in the Asbestos NESHAP (40 CFR part 61, subpart M). If you have any questions regarding the applicability of any aspect of this proposed action, please contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

B. How do I obtain a copy of this document and other related information?

The docket number for this proposed action regarding the Asbestos NESHAP is Docket ID No. EPA-HQ-OAR-2017-0427. In addition to being available in the docket, an electronic copy of this document will also be available on the Internet. The EPA will post a copy of this

proposed action at *https://www.epa.gov/stationary-sources-air-pollution/asbestos-national-emission-standards-hazardous-air-pollutants* following official Agency signature.

Following publication in the **Federal Register**, the EPA will post the **Federal Register** version and key technical documents on this same Web site.

II. Background Information

A. Why are asbestos cement pipes being replaced?

Drinking water, waste water, and storm water are handled by a system of pipes which deliver water to residences, commercial, institutional, and industrial users; transfer waste water from users to wastewater treatment plants; and carry untreated storm water to streams and lakes. As the infrastructure of municipalities age, utilities serving the population need to replace deteriorated water pipes. Existing water pipes can be made of various components, such as clay, iron, polyvinyl chloride (PVC), concrete, and A/C. These A/C pipes are potentially subject to regulation under the Asbestos NESHAP when replaced.

When A/C pipes age, the cementitious bonds in the pipe matrix weaken, primarily due to the pH of the water, particulate in suspension, acidic gases in sewage, and the scrubbing effect of sandy soil caused by movement, such as tidal changes against the outside of the pipe (*e.g.*, in coastal environments). These mechanisms degrade both the outside and the inside of the pipes, causing them to become compromised and to leak.

Once pipes begin to leak, the environment can be harmed in several ways. Leaking waste water pipes can pollute nearby waterways, such as oceans, rivers, and lakes. Compromised storm water pipes can allow excess ground water, produced during high volume storm events, to seep into the pipe through cracks. This influx of ground water (or “infiltration”) can create a significant increase in the volume of waste water arriving at waste water treatment plants. If

treatment plants become overburdened, waste water may be forced to be routed to the nearest waterway without being properly treated, leading to increased waterway contamination. Compromised drinking water pipes waste valuable finished water, which can leak out of the degraded pipes into surrounding soils. Water pipes carrying finished water have been known to rupture due to a combination of degradation and a high-pressure load, also known as a water main break.

Because existing water pipes of all types run beneath and beside major roadways, beneath buildings, and overlap other utilities (*e.g.*, gas, electricity, cable), their replacement can potentially be problematic, especially in high density residential, industrial, and urban areas. Even replacement in suburban and rural areas can require careful navigation beneath roadways and other major structures.

B. What is the Asbestos NESHAP?

The Asbestos NESHAP is a set of work practice standards designed to minimize the release of asbestos, prescribed for the handling, processing, and disposal of asbestos-containing materials (ACM). The purpose of these work practices is to minimize the release of asbestos into the environment.

Asbestos is a known human carcinogen and the primary route of exposure is through inhalation of asbestos fibers. The potential for exposure to asbestos fibers is directly linked to ACM's potential to become friable, and, thus, for fibers to become airborne. Certain ACM can readily release asbestos fibers when they are disturbed or damaged. Asbestos fibers can then become entrained into the ambient air where they become available for inhalation. More information on the health effects of asbestos may be found at *https://www.epa.gov/asbestos/learn-about-asbestos#effects.*

The Asbestos NESHAP defines friable asbestos material as any material containing more than 1-percent asbestos as determined using the method specified in 40 CFR part 763, subpart E, appendix E, section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent, as determined by a method other than point counting by PLM, the asbestos content must be verified by point counting using PLM.

In the preamble to the 1990 Asbestos NESHAP amendments (55 FR 48406, November 20, 1990), the EPA stated in response to comments on the definition of "friable" as it applied to the demolition and renovation of ACM, that the EPA's intention was to distinguish between materials that would readily release asbestos fibers when damaged or disturbed and those materials that were unlikely to result in the release of significant amounts of asbestos fibers. The Asbestos NESHAP test to determine if ACM is friable is to attempt to crush the dry material by hand. If the dry ACM can be crumbled, pulverized, or crushed to powder by hand pressure, it is friable, and is regulated under the Asbestos NESHAP.

Asbestos-contaminated material regulated under the Asbestos NESHAP is termed regulated asbestos-containing material (RACM). RACM is defined in 40 CFR 61.141 of the Asbestos NESHAP and includes: (1) friable[1] ACM; (2) Category I nonfriable ACM[2] that has become friable; (3) Category I nonfriable ACM that has been or will be sanded, ground, cut, or abraded; or (4) Category II nonfriable ACM[3] that has already been or is likely to become

[1] Friable ACM means any material containing more than 1-percent asbestos as determined using the method specified in 40 CFR part 763, subpart E, appendix E, section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
[2] Category I nonfriable ACM means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1-percent asbestos as determined using PLM.
[3] Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than 1-percent asbestos as determined using PLM, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

crumbled, pulverized, or reduced to powder by the forces acting upon it. If the regulatory threshold for RACM[4] is met or exceeded in a renovation operation, then all friable ACM in the operation, and in certain situations, nonfriable ACM in the operation, are subject to the work practice standards of the Asbestos NESHAP.

Thus, the purpose of the work practices required for the removal of A/C pipe in the Asbestos NESHAP is to minimize the release of asbestos fibers into the atmosphere, either at the time the material is removed, or at a later date, as a result of friable materials left in the soil. Therefore, in evaluating under 40 CFR 61.12(d) whether an AWP will achieve a reduction in emissions of asbestos fibers at least equivalent to the reduction achieved under the Asbestos NESHAP work practices, the EPA will evaluate whether the AWP minimizes the release of asbestos fibers to the atmosphere.

C. How is an alternative work practice approved?

The 40 CFR Part 61 General Provisions explain under what circumstances the EPA may approve an alternative means of emission limitation. At 40 CFR 61.12(d)(1) and (2), the General Provisions require that the alternative means of emission limitation must achieve a reduction in emissions at least equivalent to the reduction achieved by the work practices required under the existing standard, and that the **Federal Register** document permitting the use of the alternative be published only after notice and an opportunity for a hearing.

Additionally, the Asbestos NESHAP itself contains specific provisions under which the EPA may receive applications for prior written approval of an alternative emission control and waste treatment method. For example, 40 CFR 61.150(a)(4) authorizes "[u]se [of] an alternative emission control and waste treatment method that has received prior approval by the

[4] The regulatory threshold for RACM is 260 linear feet, 160 square feet, or 35 cubic feet (if the amount of RACM cannot otherwise be measured in linear or square feet).

Administrator according to the procedure described in 40 CFR 61.149(c)(2).” As required by 40 CFR 61.150(a)(4) and 40 CFR 61.149(c)(2), before approval may be granted for an AWP, a written application must be submitted to the Administrator demonstrating that the following criteria are met: (i) the alternative method will control asbestos emissions equivalent to currently required methods; (ii) the suitability of the alternative method for the intended application; (iii) the alternative method will not violate other regulations; and (iv) the alternative method will not result in increased water pollution, land pollution, or occupational hazards.

In order to be approved, the proposed AWP must meet all requirements for no visible emissions (VE), adequate wetting, waste handling, and disposal under the Asbestos NESHAP. The EPA is proposing that this AWP is equivalent to the work practice in the Asbestos NESHAP: it removes A/C pipe while replacing it with non-asbestos materials; converts friable ACM, and ACM that may become friable when disturbed into nonfriable ACM during the replacement process; and uses amended water[5] to achieve adequate wetting of all ACM.

D. How do the Asbestos NESHAP requirements apply to replacement of A/C pipe?

To the extent A/C pipe is either friable ACM or Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on it during the pipe replacement process, the A/C pipes meet the RACM definition. If Category II nonfriable A/C pipes do not have a high probability of becoming and have not become crumbled, pulverized, or reduced to powder by the forces expected to act on them during the pipe replacement process, those pipes would not be regulated as RACM under the Asbestos NESHAP.

[5] Amended water is water to which surfactant chemicals (wetting agents) have been added to reduce the surface tension of the water.

For renovations such as a regulated underground ACPRP, if the total amount of RACM for the project over the course of a single calendar year to be stripped, removed, dislodged, cut, drilled, or similarly disturbed during the activity is less than 260 linear feet, the renovation work practices found in 40 CFR 61.145 of the NESHAP do not apply, regardless of the pipe replacement method to be used, the type of material (Category I or II), or its condition (friable versus nonfriable). See 40 CFR 61.145(a)(4). The waste disposal requirements found in 40 CFR 61.150 and 61.154 apply to any source regulated under 40 CFR 61.145.

It is important to note that projects may not be broken up to avoid regulation under the Asbestos NESHAP, and the EPA has clarified the requirements of the Asbestos NESHAP as they relate to a project on several occasions. In our 1995 *Clarification of Intent*, we stated the "EPA considers demolitions planned at the same time or as part of the same planning or scheduling period to be part of the same project. In the case of municipalities, a scheduling period is often a calendar year or fiscal year or the term of the contract." See 60 FR 38725 (July 28, 1995, Footnote 1). As stated in the 40 CFR part 61 General Provisions, "No owner or operator shall build, erect, install, or use any article, machine, equipment, process, or method, the use of which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a VE standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size." As we said in addressing this issue in a previous applicability determination,[6] the relevant part of that requirement is the part that discusses the prohibition on the piecemeal carrying out of an operation to avoid

[6] Applicability Determination Number A020001. August 30, 2002. From George Czerniak, Chief, Air Enforcement and Compliance Assurance Branch, U.S. EPA Region 5, to Robert Swift. *https://cfpub.epa.gov/adi/index.cfm?fuseaction=home.dsp_show_file_contents&CFID=27301905&CFTOKEN=85118624&id=A020001*.

coverage by a standard. Therefore, as required by 40 CFR 61.145(a)(iii) and (iv), owners or operators (owner/operator) must predict the combined additive amount of RACM to be removed in the course of the renovation activities (or, in the case of emergency renovations, estimate that amount) over the calendar year to determine the applicability of the standard to a project.

The work practices for asbestos control under the Asbestos NESHAP exist to minimize the release of asbestos into the ambient air. When a facility component that contains, is covered with, or is coated with RACM is being removed from a facility[7] as a unit or in sections (*e.g.*, a pipeline), the rule requires adequate wetting of all RACM exposed during cutting or disjoining operations; and each unit or section to be carefully lowered to the floor and/or ground level, not dropping, throwing, sliding, or otherwise damaging or disturbing the RACM. After a facility component (*e.g.*, pipeline section) containing, covered with, or coated with RACM has been taken out of the facility as a unit or in sections pursuant to paragraph (c)(2), it shall be stripped or contained in leak-tight wrapping.[8] If stripped, the owner/operator may either adequately wet the RACM during stripping; or use a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping, and this system must exhibit no VE to the outside air, or be designed and operated in accordance with 40 CFR 61.152 (air cleaning). For removal of A/C pipe, the owner/operator must ensure that no VE are exhibited during the removal of the A/C pipe and that all A/C pipe is kept adequately wet to minimize the release of asbestos emissions, unless one of the other specific provisions of the

[7] See 40 CFR 61.145(c)(2).
[8] For large facility components such as reactor vessels, large tanks, and steam generators, the RACM is not required to be stripped. However, other requirements for such components apply.

Asbestos NESHAP is followed. Additional requirements apply to the waste handling and disposal.

The work practices in the Asbestos NESHAP that apply to the removal and replacement of A/C pipe include procedures for emission control, handling of asbestos waste, and asbestos waste disposal. These work practices are discussed in the sections below.

1. Procedures for Emission Control

The principal controls in the Asbestos NESHAP for renovations such as pipe replacement operations include requirements that the RACM be adequately wetted to minimize VE during pipe replacement operations involving RACM, and that asbestos waste be handled, collected, and disposed of properly. The emission control requirements must meet the standard for no VE. "Adequately wet" means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If VE are observed coming from RACM, then that material has not been adequately wetted. However, the absence of VE is not sufficient evidence of being adequately wet. Typically, the emission controls used to achieve adequate wetting include a fine water spray (or a mist).[9] The Asbestos NESHAP (40 CFR 61.145(c)(6)) requires that, after removal, the RACM must remain adequately wet until collected and contained, or treated in preparation for disposal in accordance with 40 CFR 61.150.

The Asbestos NESHAP specifies at 40 CFR 61.150(a)(5) that the asbestos-containing waste material (ACWM) handling requirements do not apply to Category I nonfriable ACM waste (asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1-percent asbestos) and Category II nonfriable ACM waste (any

[9] While not required under the Asbestos NESHAP, the EPA recommends the use of surfactants to amend the water used to keep ACM adequately wet because these water amendments greatly enhance the ability of water to penetrate and mix with ACM.

other nonfriable ACM containing more than 1-percent asbestos) that did *not* become crumbled, pulverized, or reduced to powder.

2. Handling of Asbestos Waste

Asbestos containing waste materials from activities regulated by 40 CFR 61.145 must be handled, collected, and disposed of in accordance with 40 CFR 61.150. No VE may be discharged to the outside air during the collection, processing, packaging, or transportation of any ACWM. All ACWM must be kept adequately wet and sealed in leak-tight containers (40 CFR 61.150(a)(1)) or processed into a nonfriable form, such as a nonfriable pellet or other shape (40 CFR 61.150(a)(2)).

3. Waste Disposal

The Asbestos NESHAP requires all ACWM to be deposited as soon as is practical in a waste disposal site operated in accordance with the provisions of 40 CFR 61.154 or an EPA-approved site that converts RACM and ACWM into nonasbestos (asbestos-free) material according to the provisions of 40 CFR 61.155.

E. What techniques are approved for removal and replacement of A/C pipes?

Even A/C pipes in good condition (which would be Category II nonfriable ACM) become regulated ACM, if the pipe has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the pipe during the renovation activities. Moreover, most of the A/C pipe being replaced by municipalities is likely to be in poor condition (*i.e.*, friable) due to the degradation over time as discussed in the section II of this document.

The EPA has previously determined[10] that pipe removal is generally a renovation unless it is associated with the demolition of a structure (in which case, it is a demolition). One applicability determination from 1994 states that removal of A/C pipe "… is a renovation because the pipe is not a load bearing structural member."

The accepted technique to remove and replace A/C pipes is known as "open trench replacement." In open trench replacement, the pipe is located, cleaned, and inspected. Because pipes run beneath and cross transportation corridors, traffic is rerouted to available detours. Temporary water and sewer service is installed to handle the water supply and/or wastewater handling affected by the disruption of service. Other utilities (electricity, cable, optical fiber) that may obstruct or interfere with pipe replacement are also identified. Once the location of the pipe and all utilities are identified, the road surfacing, and other structures, such as sidewalks, medians, etc., are removed and an open trench is dug to expose the length of pipe to be replaced. A pipe cutter is clamped around the A/C pipe being replaced, and it is scored along the outside of its circumference while water is applied to prevent emissions of asbestos to the atmosphere, which may occur along the line of cutting. The pipe is snapped along the cut and the process is repeated to produce transportable 6- to 8-foot sections of pipe. Asbestos cement pipe in poor condition may resemble wet cardboard in the way it responds to these removal activities. It can simply collapse and tear into smaller pieces, rather than snap, as A/C pipe in good condition is known to do. Each pipe section is removed, wrapped in plastic, and placed on a truck labelled according to regulations for asbestos waste disposal. This process of snap cutting and removal is repeated for the entire length of A/C pipe to be replaced.

No AWPs for the replacement of A/C pipes have yet been approved.

[10] See the applicability determination number a960010, October 12, 1994, from John Rasnic regarding removal of pipe, which may be found in the EPA's Applicability Determination Index.

III. Alternative Work Practice Request

A. What is the close tolerance pipe slurrification technique for A/C pipe replacement?

The EPA received a request from Trenchless Consulting, LLC, in July 2017, for approval of an AWP, known as the "Close Tolerance Pipe Slurrification" (CTPS) method, for the removal and replacement of A/C pipes. This is one of two AWPs requested. The second one, which involves a technique commonly known as "pipe bursting" is still under consideration. We are not discussing "pipe bursting" in this **Federal Register** document and no decision has been made on whether or not to propose approval of "pipe bursting" as an AWP.

Documentation for CTPS is found in the Docket, and includes photographs and video of the CTPS process demonstration on clay pipe,[11] schematics of the process, and descriptions of the process. The CTPS method uses an equipment train to deliver drilling fluids and clays in suspension through a pipe in the center of the train. The equipment train uses a cutting head which grinds the underground A/C pipe to a fine grain while the fluids maintain the adequately wet requirements of 40 CFR 61.145 and entrain the finely ground pipe fragments in a slurry. During this process, the slurry mixes with the drilling fluids to create a homogenous[12] wet cementitious material, which is removed from the underground pipe path at vertical access points (*i.e.*, manholes, trenches, other vertical access cuts). These vertical access points are sheathed with a nonpermeable lining, such as plastic, at the beginning and end of the run of pipe being replaced. The cementitious slurry hardens into a nonfriable A/C after 48-56 hours. The proposed CTPS AWP employs dust suppression using amended water at all vertical access points to

[11] According to the demonstration of the CTPS process by Portland Utilities, clay pipe is pulverized and slurrifies similarly to A/C pipe when subjected to the CTPS process.
[12] A homogenous mixture is one in which the components are uniformly distributed throughout the mixture.

maintain the no VE and adequately wet requirements of the Asbestos NESHAP, as required by 40 CFR 61.145 and 40 CFR 61.150.

The EPA is proposing to consider the slurry that is formed by the CTPS AWP for A/C pipe to be nonfriable once hardened. This is important because the typical A/C pipe that is replaced is usually friable in many places and in poor condition. The proposed CTPS AWP converts all the ACM of the A/C pipe into a nonfriable material which is disposed of in a landfill permitted to receive ACWM. A skim coat of the nonfriable cementitious ACM remains on the outer rim of the new pipe.

Because disposal takes place before the slurry hardens, and the test to determine friability takes place after the slurry hardens, the slurry must be sealed in containment at disposal (rather than disposed openly pending the outcome of the test). Although the Asbestos NESHAP does not require containment of nonfriable ACM, this AWP must ensure the ACWM is contained because the test indicating the ACWM is nonfriable would not yet have been conducted at the time of disposal (the friability test is done on a sample of the material that has cured and hardened over a period of 48 to 56 hours).

In contrast to the Asbestos NESHAP work practices for ACPRPs conducted in temperatures below freezing, the CTPS method may only be used when temperatures are above 32˚ F (0˚ C) to prevent freezing the slurry, drilling fluids, and/or the amended water needed to maintain adequate wetting.

B. What is the EPA's proposed action on the AWP request?

The EPA believes that the CTPS work practices are "consistent with the EPA's intent to distinguish between material that could release significant amounts of asbestos fibers during demolition and renovation operations and those that would not, and to prevent significant

emissions of asbestos fibers to the atmosphere." (see 55 FR 48408, November 20, 1990 Asbestos NESHAP final notice, in our statements in response to comments on friable vs. nonfriable materials). The EPA is proposing that, for the following five reasons, CTPS is at least equivalent to the Asbestos NESHAP process for A/C pipe removal.

First, this technique of replacement only exposes a small portion of the A/C pipe, thereby preventing significant emissions of asbestos to the atmosphere, a part of the overall reduction in emissions potential. As described in more detail below, the CTPS approach only excavates the A/C pipe at predetermined points along the pipe's path. Vertical access cuts are made to remove A/C pipe only at the beginning and end of the length of pipe to be removed and in designated vertical access points to reduce pressure buildup of the slurry. This limited excavation reduces the level of exposure to asbestos emissions from the A/C pipe remediation project.

Second, during periods where ACM is exposed, it is in the liquid slurry form and is considered adequately wet and, thus, does not become airborne, where it could be available for inhalation. The slurry is pumped out of these points into an enclosed tank to be taken to a waste disposal site approved to receive asbestos.

Third, the CTPS AWP uses amended water to improve dust suppression at all cuts, trenches, and vertical access points where A/C pipe may be exposed to the ambient air. The pipe is otherwise not exposed to the air.

Fourth, a skim coat of slurry, which contains ACM and remains on the new pipe, is not loose in the soil, but adheres to the surface of the new pipe. The skim coat fills the annular space created by the close tolerance drill through the ground as it pulls the new pipe through. Therefore, it has a structural support preventing the thin coating from being crushed, and also is

not free to migrate to the surface as a result of soil movement, such as frost heaves.[13] Furthermore, the existence of asbestos in the skim coat is noted on the utility records so that owners/operators are advised of its presence.

Fifth, once hardened, the skim coat is nonfriable and has properties of cement: similar to light-weight flowable fill (concrete) purchased from concrete plants, the skim coat has a strength of 50-150 pounds per square inch. Once hardened, the skim coat has static properties such that it does not settle or compress further. Once the skim coat is in place, it can only be removed by force, *i.e.*, using a pipe saw or a pipe cutter. Additionally, the skim coat is not subject to corrosional forces from inside the pipe. For more information on the properties of the skim coat that remains on the pipe, see docket item "Skim Coat Properties, email correspondence from Mike Woodcock, Portland Utilities Construction, January 2018."

The Asbestos NESHAP focuses on asbestos containing materials and their decline into friable material. Since the advent of new methods which were not available at the time of the last amendment to the rule, this may be a procedure whereby friable A/C pipe in poor condition is partially remediated back to a nonfriable state, and its properties are similar to the properties of other cement products such as flowable fill concrete.

Close tolerance pipe slurrification differs from the conventional work practices in which the entire pipe, much of which is in poor condition and may be friable, is excavated and exposed, cut into numerous 6- to 8-foot transportable sections, sealed in leak-tight wrapping, labeled, and transported to an approved asbestos waste disposal site. Five A/C pipe replacement guidance documents from state and local agencies (from Massachusetts, Maine, Oregon, Utah, and the city

[13] Frost heaves occur in the top 3 feet of soil, and occur at low temperatures when available moisture in the soil freezes, expanding, and displaces materials with higher surface area (regardless of density) upward due to decreasing pressure. In this way, chunks of material of various densities may be moved to the surface.

of Richmond, Virginia) are available in the docket for reference on the conventional work practices.

Consequently, the EPA believes that by following the CTPS AWP, adequately wet and no VE protocols, and exposing only small sections of A/C pipe to the air, asbestos emissions to the atmosphere are minimized, and the AWP would achieve an emission reduction at least equivalent to the current Asbestos NESHAP.

While the Asbestos NESHAP (and associated applicability determinations) contemplate and provide direction on a number of situations for handling and managing asbestos, the situation whereby friable ACM is turned into nonfriable ACM is not one that is contemplated under the rule. The EPA is proposing that when the CTPS work practices are adhered to as described in this document, and when the test for friability confirms that the resulting hardened slurry (skim coating) is nonfriable ACM, the resulting material can be regulated as nonfriable ACM. Under 40 CFR 61.145(c)(1)(iv) of the Asbestos NESHAP, under certain conditions nonfriable ACM need not be removed, if they are Category II nonfriable ACM and the probability is low that materials will become crumbled, pulverized, or reduced to powder during demolition. We are proposing that the nonfriable skim coating of ACM left on the outer rim of the new pipe be allowed to also remain in place.

The EPA is proposing that when CTPS is used to remove the underground A/C pipe, while maintaining no VE and the adequately wet requirements of 40 CFR 61.145 and 40 CFR 61.150(a), removing the old A/C pipe, converting all A/C pipe to Category II nonfriable ACM, and replacing the underground A/C pipe with new pipe, then CTPS is at least equivalent, in terms of emission reductions, to the work practices in the Asbestos NESHAP as they apply to renovations.

The Asbestos NESHAP waste disposal requirements include deed notations for inactive asbestos waste disposal sites, where ACWM (*e.g.*, friable ACM) has been left behind in the ground. The EPA included this provision in the Asbestos NESHAP for situations in which manufacturing waste had been left behind, sometimes buried on property, and that property later was sold for development. Without a deed notation to warn potential buyers of its presence, new owners could accidentally expose themselves to asbestos (for example, by installing a swimming pool, driveway, or digging a basement). The EPA, therefore, added requirements for property deed notation when ACWM has been left behind in the ground, creating an inactive asbestos waste disposal site.

The EPA is proposing that the nonfriable ACM resulting from CTPS would not be subject to deed notations. However, as is current practice, the EPA proposes that owner/operators (*e.g.*, municipality or utility) using the CTPS AWP would be required to maintain utility maps with the actual location of each ACPRP identified by the 6-digit latitude and longitude coordinates of the newly laid line, and that the utility maps would note the line as covered by a skim coat of ACM for future work.

The EPA is also proposing that the other requirements in the Asbestos NESHAP that apply to renovations, including notification requirements found in 40 CFR 61.145(b), would apply to the CTPS AWPs. Additionally, the EPA is proposing that the waste handling and disposal requirements found in 40 CFR 61.150 and 61.154 would apply to the slurry that is removed at the ACPRP.

IV. What are the proposed work practices for A/C pipe replacement?

The EPA is seeking the public's input on Trenchless Consulting's request that the EPA approve the CTPS approach as an AWP under the Asbestos NESHAP. We are seeking

comments on whether the CTPS work practices are equivalent to those in the Asbestos NESHAP, including adequate wetting requirements, no VE, notification, containment, labeling, waste handling, waste transportation, and disposal of ACWM. The materials supporting the request for this approval are available in the Docket and include industry descriptions of the CTPS work practice and processes, the process patent, records of the EPA's communication with the industry requestors, and the EPA's observations of the methods conducted on PVC and clay sewer pipe.

Based upon our initial review of the proposed AWP request, the demonstrations of the work practice, and written materials including equipment, materials, slurry characteristics, testing, and waste specifications, we propose that, by complying with the following list of requirements, this proposed AWP will achieve emission reductions at least equivalent to emission reductions achieved under 40 CFR 61.145, 40 CFR 61.150, and 40 CFR 61.154, as required by the applicable Asbestos NESHAP, provided that adequate wetting accompanies all vertical access points, access trenches, and manholes to prevent VE, and that the A/C cementitious material resulting from this process is properly handled and contained during and after removal and properly disposed of as required by the Asbestos NESHAP.

The patent related to this process, "Method of Replacing an Underground Pipe Section," is available from the U.S. Patent Office, patent number US8,641,326B2; February 4, 2014, and a copy is available in the docket. That patent deals with the replacement of low-pressure sewer pipes and indicates some parameters that may be different from the work practices in this notice, depending on the soil composition, depth of pipe, and serviceable use of the pipe (*e.g.*, a low-pressure sewer, waste water, or fresh water pipe). While this patented process is one used by the

company requesting approval of this AWP, an owner/operator would not have to license the patent and could choose different equipment in order to follow the work practices of this notice.

A. What is the Proposed CTPS AWP?

The proposed CTPS AWP is as follows:

1. Vertical Access Points

Vertical access points (*e.g.*, manholes, trenches) are made at designated intervals along the length of pipe replacement. The distance between vertical access points is a function of the soil type, pipe size, pneumatic pressure on the CTPS head, and frictional drag on the line; and is determined for each project on a case-by-case basis by the owner/operator. Incorrect estimation of the vertical access point locations may result in a malfunction. The owner/operator must not disturb A/C pipe during the digging out of these access points. Water and suction should be used to uncover as much of the A/C pipe as is needed to begin the CTPS process.

2. Removal of Pipe at Terminals and Vertical Access Points

At the starting and terminal points, and at designated intervals along the length of pipe replacement, sections of pipe are cut and removed at the vertical access points (*i.e.*, manholes, trenches). The owner/operator must handle all sections of A/C pipe in accordance with 40 CFR 61.145 and 40 CFR 61.150 of the Asbestos NESHAP.

3. CTPS Equipment Train

The CTPS technique should use a drilling head train with a slightly larger diameter than the pipe being replaced. This technology must use a heavy duty four-stage cutting and wetting train, made of hardened carbon steel, which is able to be fed directly around the pipe to be replaced. The cutting head must be drawn around the existing pipe and must be capable of grinding the old A/C pipe to a fine powder using a liquid delivery system as described in section

IV.A.4 of this preamble. The process must return the A/C pipe to a cementitious slurry that is a homogenous mixture and stays adequately wet through disposal according to the requirements of 40 CFR 61.145. The owner/operator must ensure that the CTPS train pulls the replacement pipe behind it, and that no ACM contacts the inside of the new pipe.

4. Liquid Delivery

The horizontal drilling train must be equipped with ports to deliver liquid materials to the drilling head. Drilling fluids and bentonite clay should also be delivered through these ports to reduce frictional drag on the line, and to lubricate the interface along the soil to pipe line.

5. Trackable Pipeline

The owner/operator would be required to ensure that the new pipeline is trackable by steel cable (or other durable trackable material) laid with the new pipe.

6. Slurry Characteristics

The owner/operator would be required to ensure that no visible emissions are discharged to the air from the slurry, and that the slurry is a homogenous mixture comprised of finely ground A/C pipe, drilling fluids, bentonite clay, and other materials suspended in solution that, when cured (a period of 48-56 hours), re-hardens so that it meets the sample friability test in section IV.D.2 of this preamble. The slurry must meet the no visible emissions requirements of 40 CFR 61.145 and 61.150.

7. Slurry Removal, Containment, Transportation, and Disposal

The A/C pipe slurry is removed at vertical access points using a vacuum attached to a tank (*e.g.*, vacuum truck). The owner/operator would be required to ensure that the slurry remains in an adequately wet state during the slurrification process and remains in containment throughout the removal, transportation, and disposal processes, meeting the requirements of 40

CFR 61.145 and 40 CFR 61.150. The slurry must be contained and in slurry form at the time of disposal in a landfill permitted to accept ACWM and meeting the requirements of 40 CFR 61.154. The slurry must be managed at the disposal site using procedures meeting the requirements of 40 CFR 61.154.

8. Adequate Wetting with no VE

Any opening to the atmosphere along the pipe is a potential source of asbestos emissions to the outside (ambient) air. The owner/operator would be required to ensure that dust suppression equipment (*i.e.*, dust suppression apparatus or manual misting) using amended water is placed at each vertical access point. If a new trench is dug to resolve a malfunction, the owner/operator would be required to ensure that the new trench is equipped with dust suppression and follow the procedure in paragraphs (1) and (2) above. Amended water is water to which surfactant chemicals (wetting agents) have been added to reduce the surface tension of the water.

B. What notification requirements would apply?

If an underground ACPRP meets the applicability and threshold requirements under the NESHAP, then the EPA (or the delegated agency) must be notified in advance of the replacement in accordance with the requirements of the Asbestos NESHAP at 40 CFR 61.145(b). See 40 CFR 61.145 for more information on the notification requirements.

C. What inspection, operation, and maintenance requirements would apply?

1. Inspection

Prior to using the CTPS for an ACPRP, the owner/operator would conduct underground pipe inspections (*e.g.*, by using remote technologies like robotic cameras) and shall identify, locate, and mark onto an underground utility map of the area all identified potential areas of

malfunctions, such as changes in pipe type, drops in the line, broken and off-center points, and changes in soil type.

2. Operation and Maintenance

The owner/operator of a CTPS method system is required to install, operate, and maintain the drilling head train, CTPS liquid delivery system, and all equipment used to deliver adequate wetting at all vertical access points and cut lengths of pipe in accordance with their written standard operating procedures. The records must be kept in accordance with section IV.F.1 of this preamble.

D. What sampling, testing, and utility map notation requirements would apply?

1. Sample Collection

After the slurry has been pumped from the vertical access points, but before disposal, the owner/operator of a CTPS method system is required to collect a 2-inch roughly spherical wet sample of the slurry. A single sample must be collected for each project discharging to a single enclosed tank. The owner/operator would be required to seal the sample in leak-tight wrapping and allow the sample to harden and dry (usually 48-56 hours).

2. Sample Friability Test and Certification

When the sample is hardened and dry, the owner/operator would be required to attempt to crush the sample by hand. The sample that cannot be crumbled, pulverized, or reduced to powder by hand pressure is nonfriable, and the remaining slurry from that pipe replacement job is likewise nonfriable. After testing, the owner/operator would be required to ensure that the sample is packaged in leak-tight wrapping for storage, labeled “Asbestos Containing Material. Do not break or damage this sealed package,” dated according to the ACPRP date of generation, stored in a secure location that is inaccessible to the general public (such as a locked storage

unit), and is maintained by the owner/operator for a period of 2 years. After this 2-year retention period, the sample may be disposed of in a landfill permitted to accept ACWM.

a. If the sample cannot be crushed, crumbled, or reduced to powder by hand pressure, the owner/operator would be required to certify this as follows: "The hardened slurry sample from the ACPRP conducted on (date) at (location) could not be crushed, crumbled, or reduced to powder by hand pressure. I am aware it is unlawful to knowingly submit incomplete, false, and/or misleading information and there are significant criminal penalties for such unlawful conduct, including the possibility of fine and imprisonment." The owner/operator would be required to maintain a signed certificate of this statement so that it is available to the EPA Administrator, local, and state agency officials upon demand.

b. If the sample can be crushed, crumbled, or reduced to powder by hand pressure, the owner/operator would be required to follow the malfunction reporting requirements in IV.F. 2 below.

3. Utility Map Notations

Owner/operators would be required to note utility maps according to the actual location identified by the 6-digit latitude and longitude coordinates of the newly laid line. Notations would have to be maintained for the life of the new pipe by the owner/operator (*e.g.*, municipality or utility), and would have to be labeled as covered by a skim coat of ACM for future work.

E. What labeling and transportation requirements would apply?

Because all A/C pipe being replaced using the CTPS technique is converted to a nonfriable state during the replacement, it would be categorized as Category II ACM and would

need to be labeled and transported in accordance with the corresponding requirements of 40 CFR 61.145 and 40 CFR 61.150 in the Asbestos NESHAP.

F. What recordkeeping and reporting requirements would apply?

1. The owner/operator would be required to record and maintain for a period of 2 years the following data:

a. Date(s) from beginning to end of each ACPRP;

b. Location(s) of the A/C pipe(s) replaced using CTPS, identified by 6-digit latitudinal and longitudinal coordinates for each ACPRP;

c. Diameter and length of A/C pipe replaced at the ACPRP;

d. Total amount of slurry generated at the ACPRP;

e. Total amount of slurry disposed by the owner/operator from the ACPRP;

f. Slurry disposal site;

g. Manifest of ACM slurry disposal; and

h. Malfunction records (if applicable).

i. Records of VE events and their duration (including the time and date stamp) of any VE event;

ii. Records of when and how each VE event was resolved. Indicate the date and time for each VE period, whether the VE event occurred at an exposed manhole, trench, or other vertical access point, and the number of openings to the ambient air affected;

iii. Procedure used to resolve each VE event; and

iv. Results of each sample friability test that indicates the slurry is friable, as required by IV.D.1 and 2 above.

i. Records of the standard operation procedures for the installation, operation, and maintenance of the drilling head train, CTPS liquid delivery system, and all equipment used to deliver adequate wetting at all vertical access points and cut lengths of pipe.

2. Each owner/operator is required to submit the following reports to the Administrator after each occurrence, as follows:

a. Malfunction Report. The malfunction report must include the records in section IV.F.1.h.i.-iv of this preamble. The malfunction report must be submitted as soon as practical after the occurrence, but in no case later than 30 days.

b. ACPRP Report. The ACPRP report must be submitted to the Asbestos NESHAP program office within the EPA Regional office in which the ACPRP is located. The report may be submitted electronically when the means to do so are available. The EPA Regional office may, at their discretion, waive this requirement and delegate this reporting to the state and municipality. If the EPA Regional office has waived the reporting, and if the state or municipality is unable to receive electronic reports, then only a hard copy is required to be submitted. These reports must be postmarked or electronically submitted within 30 calendar days of completion of the ACPRP.

V. Request for Comments

We solicit comments on all aspects of this request for approval of CTPS as an AWP for the work practice standards specified in 40 CFR part 61, subpart M, the Asbestos NESHAP. We specifically seek comments regarding whether the AWPs, as described in section IV above, will achieve emission reductions at least equivalent to the work practices in the Asbestos NESHAP at 40 CFR 61.145 and 40 CFR 61.150.

Dated: April 18, 2018.

Panagiotis Tsirigotis,
Director, Office of Air Quality Planning and Standards.
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